

JUL 30 1946

Sec. 562 P. L. & R.
U. S. POSTAGE
PAID
Permit No. 88
East Stroudsburg, Pa.

MEDICAL TIMES

Wall St., New York 5, N. Y.

POSTMASTER: If undeliverable as addressed FOR ANY REASON, notify us, stating reason or giving new address on form 3547, postage for which is guaranteed.

July

Univ. of Michigan.
General Library,
Ann Arbor, Mich.

Medical Times

The Journal of the
American Medical Profession



Leprosy, Post-War Problem
Oxidase and Diabetes

Medical Book News Editorials
Contemporary Progress

Vol. 74

No. 7

Address all Exchanges and Books for Review to 1313 Bedford Avenue, Brooklyn 16, N. Y.



"I tossed all night"

is a frequent complaint from patients who are victims of nervous insomnia. To ensure the needed calm repose in cases in which sleep would otherwise be disturbed or fitful, Allonal has proved to be a most satisfactory sedative-hypnotic. Allonal 'Roche' because of its hypnotic and analgesic influence may be depended upon for prompt but gentle action in providing a night of restful, refreshing sleep of normal duration even in the presence of pain. Allonal tablets are supplied in boxes of 12 and 50 . . . HOFFMANN-LA ROCHE, INC., NUTLEY, N. J.



ALLONAL 'ROCHE'

FOR RESTFUL SLEEP

B
a
A
ch
on
lic
An
tes
be
un
wi
fo
ara
of
liq
thi
int
soc
pra
dig
ful
div
fac
S
me
one
gan
rep
slau
of
per
194
Fed
stri
per
peri
At
spe
sam
ing
trol
98.6
T
lack
the
MED

EDITORIALS

Black Market Meat and the Public Health

AMID what R. L. Duffus calls the "muck and chaos" of our national life one has to think of the public health aspect of things. An increase of gastro-intestinal infestations and infections would be expected in view of the consumption of uninspected black market meat, together with the effects of faulty refrigeration of foods, too lengthy storage, hurried preparation of products, and the consequences of lost weekends due to the abuse of liquor. Many factors are combining in this way to increase the incidence of gastro-intestinal ailments, from the diarrheal episodes now frequently encountered by the practitioner to the major lesions of the digestive tract. And bolstering man's wilful conspiracies against national and individual health loom increasingly morbid factors in the neurotic realm.

Strictly as regards the black market in meat, the situation is really not so bad as one would infer from one type of propaganda, for the Department of Agriculture reports that in 1945 Federally inspected slaughtering plants processed 71.7 per cent of all beef. The record in 1944 was 72 per cent and in 1936-39 it was 66 per cent.

"Between January 5, 1946, and May 11, 1946, the average weekly slaughter of Federally inspected plants, excepting two strike-bound weeks in January, was 98.7 per cent of what it was during the same period in the near-record year of 1945. At its lowest point this year Federally inspected slaughter fell to 83 per cent of the same week last year. In the week following the re-establishment of slaughter controls the figure rose from 88.8 per cent to 98.6 per cent."

These facts and figures, taken with the lack of any impressive statistical proof in the current literature of greatly increased



enteric disorders directly chargeable to black market meat, tend to support the supposition that such increase as has been noted as probably a consequence of the black market in meat has not been great in volume

or unduly severe in character. There has been an increase of enteric disorders, but many factors are involved, of which uninspected meat is only one, and a relatively unimportant one.

The Colonel's Lady and Judy O'Grady

SAN Francisco psychiatrists, in a municipal inquiry into the reasons for promiscuity, report on a study of 365 girls covering 17 months. Reasons are given as boredom, loneliness, curiosity, spite, emotional dependence, a desire to conquer, maladaptation, poor environment, broken homes, the desire to hold a man's affection, interest in money, and enjoyment of sexual relations. Only one girl gave the last reason, which would tend to support a thesis that, as regards frigidity, "the colonel's lady and Judy O'Grady are sisters under the skin."

Reasons commonly given for frigidity in the case of women of the better class are parental, religious, social and educational discipline of a rigid sort, with puritanism, prudery, erotic isolation, and various other cultural and intellectual factors figuring largely.

But one would seem to have a right to infer frigidity in the San Francisco group as well.

What, then, is really behind frigidity? The subject is a confusing one.

Figure It Out

Organized labor, in its determined effort to defeat any great extension of governmental control over unions, ought to understand and sympathize with the re-

—Concluded on page 198

LEPROSY, A POST-WAR PROBLEM

Le Roy F. Heimbürger, M.D.

Springfield, Missouri

IN no period of American history have so many young men and women emigrated to primitive areas of the world's surface, especially the tropics, and been exposed in such large numbers to the exotic ailments usually classified as tropical diseases. This fact tends to cause one to meditate upon the possibilities of a future change in and addition to the epidemiological problems we may face here in the United States.

Ever since recorded history the march of armies has been the means of transmitting disease from one region to another and causing widespread havoc through the virgin and less resistant nation. Smallpox took its toll of thousands of American Indians when introduced by the European soldiers and sailors in early Colonial days, while in reciprocity the returning Spanish and Portuguese sailors and soldiers have been thought by some to have introduced syphilis to their own countries from which it was carried to France, Italy and bordering countries as a gift from America, in a most malignant form. More recently measles played havoc with the natives of the Philippines when introduced through the medium of the invading American soldier in the early part of the twentieth century.

Therefore it is well within the law of probabilities that diseases of which we have little knowledge, and therefore are less able to recognize, shall be introduced by the returning service man and woman.

AMONG the least known and still less generally understood diseases of the Orient and the Pacific areas is one of the earliest described and recorded, namely, leprosy. A safe estimate, I believe, would be that 99 per cent of the physicians now residing in the United States have never seen a case of leprosy. There are many lurid pictures of lepers generally shown in the standard textbooks describing skin dis-

eases, but not many physicians have looked at the pictures, much less read the text, since they left medical school. Therefore it is important to refresh our memories and bring up to date the knowledge we have acquired about leprosy.

Historically we associate leprosy first with the Biblical references to the disease "zaarath" and principally to the remarkable passages on the symptoms and prophylaxis found in Leviticus, chapters XIII and XIV. The disease was prevalent in Egypt, Persia, India, Japan and China centuries before the Christian era and clear enough descriptions of its symptoms are written in old records recently found to show its epidemic proportions during those early periods. There is general agreement from archeological studies that the earlier Greek physicians did not know of its existence and that it was not introduced into Europe until Pompey's soldiers returned from the conquest of Egypt.

Then during the middle ages Europe experienced leprosy in severe epidemic proportions immediately following the return of the Crusaders. At the peak of the epidemic lepers wandered over the countries of Europe as outcasts, living in huts in the open fields, and in some manner spreading the disease throughout the continent, from the North Sea to the Mediterranean, and from Spain to the Volga. Although a few leprosaria appeared as early as the eighth century, by the thirteenth century 19,000 had sprung up in Europe of which 2000 were in France alone. These institutions, through their segregations of the lepers, no doubt played a great role in checking the disease on the continent of Europe. The disease was introduced to the Western hemisphere by way of the Negro slaves "imported" from Africa with a sprinkling of cases coming in with the immigrants from the Scandinavian countries.

Therefore, except for the Western hemisphere, the spread of leprosy has been enhanced by military migrations. From time immemorial the greatest endemic area has been Asia, the near and Far East.

Through segregation the disease has been practically eliminated from the white man's domain and, as he has isolated himself, his home and his countries have been comparatively free from the one disease the mere mention of whose presence in the vicinity will throw the community into a panic. It is not beyond the realm of possibility that the twentieth century crusaders will import fresh foci of this disease into the countries of North America.

In a study by Hopkins and Faget¹ of the admissions to the Carville Leprosarium in Louisiana between July, 1928 and January, 1944, thought-provoking facts are brought out. Of the 723 patients admitted during that period 32 were Spanish War veterans who enlisted from non-endemic areas in the United States and therefore must have contracted the disease in Cuba, the Philippines or other countries occupied during that war. There were 52 World War I veterans and, to the date of the article, 10 veterans of World War II. But inasmuch as these latter came from endemic areas in the United States or were born in the Philippines, Mexico or Puerto Rico, it cannot be said that they were not infected before their induction into the Army. In World War I, except for the occasional and rare contact with the Chinese Labor Battalion in France, our troops did not occupy areas of the globe where leprosy is endemic and not a rarity. It is far too early to tell the results for World War II, but if the number of Spanish War veterans can serve as an index there will be no small number of victims in the ranks of those returning from the present wars.

Although there are endemic areas of leprosy in Northern Europe, it is particularly a disease of the tropical and sub-tropical regions. Many members of the armed forces of the United States have been stationed for months to years in Asia including the islands of the Pacific, Africa and South America where the disease prevails more or less uninhibited and in many

early cases is not recognized. It is estimated² that there are approximately 1,250,000 cases scattered through China, Japan, India, Indo-china, Siam, the Philippines, East Indies and the Australian group of Pacific Islands. In south and central Africa, Egypt and Madagascar there are approximately 500,000 cases, and there are estimated to be 30,000 more in South America, especially Brazil, Guiana, Colombia, Venezuela and Cuba. In each of these districts, Asia, Africa and South America, our armed forces have had military installations throughout the War. The presence of troops in areas where leprosy is endemic has created a new problem for the medical officer in the field and even if only sporadic cases appear in the United States these will create new problems for the general practitioner and specialist. Even during the peace times of the past 25 years, cases have appeared sporadically among our population, and although the statistics gathered through the admissions to Carville show many imported cases from other countries there have undoubtedly been infections contracted and developed within our own borders. The ease of contracting the disease seems to vary in different areas, both at home and abroad.

According to McCoy³ there are in the United States two major communities in which leprosy spreads more easily than other areas, (1) Florida, Louisiana and Texas, areas bordering the Gulf of Mexico, where it spreads freely, (2) Northern Florida, Georgia and South Carolina, where it spreads feebly. In the remainder of the States and especially the large metropolitan areas seemingly it does not spread at all. It would seem that as sanitary measures increase, the scale of living rises and better standards and practices are observed in a community leprosy seems to disappear. Historically these observations seem to prove true in Europe by the end of the sixteenth century, in Scandinavian countries during recent years, even in the case of their descendants who immigrated to the Great Lake regions in the past century, and to a certain extent in the Philippines and Hawaii in the years immediately preceding the outbreak of World War II.

These peculiar behaviors of the disease are apt to confuse the physician and to be the cause of his overlooking the occasional victim who may come under his observation. Without going into an elaborate discussion of the etiology, pathology, physiology and treatment of leprosy we would like to consider briefly a few facts which should be of help in picking up early a person afflicted with leprosy. In spite of being the oldest, most widespread and most dreaded disease of mankind "there is less known about the essential factors in the pathogenesis and transmission of leprosy than in any other great infection of mankind." The *Mycobacterium leprae* of Hansen (formerly called the *Bacillus leprae*) is the acknowledged causative organism. The finding of it within the cytoplasm of the cells of the human and its differentiation from the *Mycobacterium tuberculosis*, is conclusive evidence of the disease. But for all practical purposes the recognition rests with those capable of making a clinical diagnosis.

For this reason physicians are admonished to suspect leprosy in all not readily diagnosed skin and peripheral nerve lesions, especially if the lesions are combined with anesthesia and paresthesia, and more especially if the person has been in lepra areas or in intimate association with one who has returned from such an area. Remember I say suspect, which does not necessarily mean blurting out in front of a patient or his relatives a hint that he might have this disease, because if the lesions do not turn out to be caused by leprosy untold misery and lack of faith will be indelibly implanted in the patient's memory.

Although the exact mode of transmission is unknown it is generally conceded that contact, direct or indirect, with a leper is necessary. Every parasite common to the human being has been suspected as a carrier but after exhaustive study none has been convicted. Latency and human carriers seem necessary assumptions in view of some types of infections which appear after long periods of total absence of the disease in some communities.

SINCE much depends on the early clinical and bacteriological diagnosis in order to obtain a favorable prognosis in treatment, the common early signs and symptoms will now be considered. In the majority of cases the first appearance of leprosy is in the form of one or more macular patches, annular or circinate in form. These patches are lighter in color than the surrounding skin. Often erythema may be present with an elevation in the surface of the whole patch or only in its margins. As the lesion slowly progresses a few patches may often be noticed acting as "scouts" outside the advancing margin. In some patches the skin surface becomes coarse and shining in appearance and does not perspire as the surrounding skin; if the patch is located in a hairy portion the hairs become coarse, break off at the surface of the skin and leave a black dot which represents the curled up hair stub in place in the original follicle. There is always some disturbance of sensation manifested in the acute stages by a loss of pin-prick sensation in the patch when compared with the surrounding skin but the retention of deep algnesia. In the more advanced stages the touch of a feather or cotton swab cannot be felt in the patch.

The nerve branches supplying the affected skin often are useful in confirming the diagnosis. Nerve thickening is characteristic of leprosy. The thickened branches can be felt running under the skin and pressure on them as they run under the patch often elicits a tingling sensation. Pressure on the nerve trunks, for example, the ulnar or peroneal, sometimes produces acute pain along the course of the nerve, which is thickened and nodular. In some cases of early leprosy there may be no definite skin lesions, the disease apparently first showing itself in some nerve trunk, most commonly the ulnar, with the peroneal running a close second. In these cases an anesthesia is produced in the most distal parts supplied by the nerve which, in the case of the ulnar, causes a flexion of the small and ring fingers due to trophic changes in the small muscles consequent upon a cutting off of the nerve supply, with accompanying paresthetic and anesthetic

disturbances in the skin.

The above symptoms, either in the skin or peripheral nerves, are generally sufficient to make one suspicious of leprosy and enough to make a nasal smear obligatory. The extreme importance of making an early clinical diagnosis must be stressed in the realization that there is a prospect of a 100 per cent cure to be expected in these early cases when thoroughly treated.

Clinically, early leprosy can be more easily and more certainly diagnosed than tuberculosis in a corresponding stage of advancement. In overlooking the early signs the incurable stage is often reached before treatment is instituted and irreparable damage done. The active early signs noted in leprosy may be summarized briefly as—

- (1) annular and circinate depigmented macules and/or plaques
- (2) erythema or raised margin in original plaque
- (3) appearance of "scout" lesions outside the border of advancing lesions
- (4) thickening, anhydrosis and depilation in plaques
- (5) thickening and/or tenderness of nerves leading to lesions
- (6) failure to respond to sensations of light touch, pain, heat and cold
- (7) positive bacteriological findings in skin, mucosa or lymph nodes.

The significance of the bacteriological examination cannot be considered other than more or less arbitrary, that is, if the *Mycobacterium leprae* is found, the patient is suffering from leprosy; if it is not found, the lesions presented may still be leprosy, but the particular smears taken have not revealed the organism. Therefore smears should be taken repeatedly from several areas. These smears may be taken directly from the skin lesions by "scraping" from the depth of the dermis through a 2 mm. cut or by a "snip" of a portion of the skin within the lesion with a pair of sharp scissors and then rubbing the raw surface of the dermis onto the slide to get as much of the cellular elements as possible. Nasal examinations are made routinely in all leprosy clinics with the use of a nasal speculum in order to find infiltrations, nodules or ulcers on the interior of the

nose. Even if no pathological lesions are found, scrapings of the mucous membrane of the septum are taken and smeared on the slide. The material obtained either from the skin or the mucous membrane is fixed by flaming and stained with carbol-fuchsin by the same method used for the *Mycobacterium tuberculosis*, decolorized with sulphuric-nitric acid and counterstained with methylene blue. The acid-fast organisms are seen as groups of rods arranged like cigars in the cytoplasm of monocytes, epithelioid cells, giant cells, vascular endothelial cells and neutrophilic leukocytes.⁴ The finding of such organisms leads to a positive diagnosis of leprosy.

AT the Leonard Wood Memorial Conference on Leprosy held in Manila in January, 1931⁵ the disease was classified into two main types: (1) Neural-N and (2) Cutaneous-C. These major types were subdivided into more detailed subtypes indicating the degree of severity. The neural subtypes were designated as, N-1, slight neural involvement, N-2, moderately advanced, and N-3, advanced. The same in regard to the cutaneous varieties, C-1, slight cutaneous involvement, C-2, moderately extensive and advanced lesions, and C-3, advanced involvement including ulcerations, gangrene, etc. In some cases there is a mixture of lesions, that is, an involvement of both the skin and the peripheral nerves. Such types are designated as C-2 N-1, meaning a moderately advanced involvement of the skin with a slightly involved neural lesion, or N-3 C-1, meaning advanced neural lesions such as paralyzes and contractures with depigmented, anesthetic, anhydrotic plaques in the skin. These classifications are of academic interest to others than leprologists but the mere fact that there is a need for such a classification, as in syphilis, indicates in a small way the diversity of symptoms which may be presented.

Leprosy may be confused with a number of diseases in the United States, or more exactly many diseases will be thought of before leprosy even "flashes across the mind." As examples of such diseases vitiligo could be mistaken for leprosy but there is no anesthesia in vitiligo. Leprosy should be differentiated from the sensory

and trophic lesions of syringomyelia and from hypertrophic polyneuritis with flaccid paralysis of the hands and thickened nerve trunks; and from progressive muscular atrophy. Among the skin diseases are lupus vulgaris, some tuberculides, acrodynia, syphilis, erythema nodosum and multi-forme, tinea circinata (especially in children), pellagra, mycosis fungoides, and leukemia cutis. But if the seven signs listed above are borne in mind and a search made for the organism microscopically, a positive diagnosis should be possible. In the advanced case there is little difficulty experienced in the recognition by clinical facies alone. All the recognized textbooks on skin diseases carry excellent text and pictures of these cases.

After the diagnosis is made the next logical procedure is to outline a method of treatment and regimen for home life if it is decided that the patient is not a danger to the community. Leprosy is universally a notifiable and reportable disease. This must be remembered so that when a case is found, early consultation and advice should be sought; then, if proven, the authorities should be notified for proper disposition. The average general practitioner is unable to assume the responsibility for the care and treatment of a case of leprosy.

Of course the whole question of segregation and isolation is open to argument. There is no doubt that segregation played a major role in Europe in the eradication of the disease and it has done an excellent although a difficult job in the Philippines and Hawaii. This method will be used no doubt more extensively in the future along with modern methods of treatment. Arguments against segregation bring forth the questions, first, why segregate a person suffering from leprosy when the one with tuberculosis even when positively diagnosed is allowed freedom? Second, if leprosy is no more infectious than tuberculosis is it necessary to segregate if the sufferer stays under treatment? Third, in many countries forced segregation has been effective for the more advanced cases only, that is, the more infectious among the early cases hide their trouble by staying away from the physician, or the relatives do not bring the

sufferer for examination until the disease is so obvious that secrecy is no longer possible; therefore the danger of infection has been going on for years and the case itself is beyond any hope of a cure; segregation, early diagnosis and treatment, therefore eradication, is not possible because the patient is kept hidden from fear of separation from loved ones. And fourth, the stigma of the home or hospital for lepers remains long after the disease has been clinically and bacteriologically cured. "Once a leper, always a leper" is a saying the world around. Therefore the rehabilitation problem is greatly harmed by segregation unless the treatment center has in its title no hint of the disease. It is felt that if the patient will remain under observation and treatment for the required length of time, just as the syphilitic does, the leper can be handled, with no more risk to the community, as well in the clinic or doctor's office as the tuberculous or syphilitic patient. Many cases in the United States are being treated on this basis and there has been no hint that this is a dangerous procedure. In the Philippines since the establishment of treatment centers throughout the islands before the war with only occasional segregation, it is felt that greater inroads have been made into the hide-outs of the disease than under the old system of forced isolation and segregation.

THE treatment of leprosy could be the subject of a lengthy dissertation in itself, but here we will only touch on the more modern developments and expectations. Ever since the legendary nobleman of ancient China exiled himself because of this disease to what is now called Burma and ate some of the fruit of a tree, thereby curing his leprosy, the oil expressed from the seeds of *Hydnocarpus* has been the basis of practically all treatment for hundreds of years. The seeds of this group of trees originate in Assam, Siam, Burma and regions immediately contiguous, a rather small, circumscribed area. In the United States Pharmacopeia the term "chaulmoogra" is given to the general species but the true chaulmoogra is a specific type growing in rather inaccessible

places, therefore not harvested in great abundance, whereas the seeds of the *Hydnocarpus anthelminthica* are abundant and exported as chaulmoogra to be used in the treatment of leprosy in modern medicine and in the treatment of leprosy and other skin diseases by the medicine men of China and India. The story of the krabao⁶ seeds of Siam and the Da-feng-tzu of China would make an interesting paper but this is not the place.

The oil expressed from these seeds is used orally and by injection and today forms the foundation for the modern drug treatment. By mouth the pure oil is administered in doses of five to sixty minims (0.3 to 4.0 cc.) on a lump of sugar or mixed in milk or fruit juices, but to the majority the taste is disgusting and its continued use causes gastritis and gastrointestinal upsets necessitating withdrawal. It has also been used mixed with other ingredients to form pills, or in enteric coated capsules, given in ascending doses with striking success, especially in Egypt and by the native medicine men of China. In the hands of Occidental physicians the intramuscular, subcutaneous, intradermal and intravenous methods have been employed. Either the refined or purified oil, the ethyl esters or water soluble preparations have been used with marked success in the hands of some leprologists but the same preparations have caused adverse criticism in the hands of others. At the International Leprosy Congress in 1938 it was the consensus of opinion, and so placed on record, that chaulmoogra oil from the *hydnocarpus* species and its ethyl esters administered intramuscularly, subcutaneously and intradermally remain the most efficacious specific treatment for leprosy; that no proprietary preparation at present on the market is more effective than the pure oil and esters prepared in institutions. In contrast to this McCoy⁷ writes that notwithstanding the general belief that chaulmoogra oil and its derivatives are valuable in the treatment of leprosy, he has concluded that they have little or no curative value and that the side effects probably outweigh any advantages. This is a far reaching statement and so di-

ametrically opposed to the experience of the years that until some more potent remedy is forthcoming the sufferer should be given full advantage of their use. During my active participation in the treatment of leprosy in China, we used a combination treatment of courses of gold salts intravenously with alternate courses of the cold pressed purified oil from *Hydnocarpus wightiana* sterilized with 4 per cent triple distilled creosote, by subcutaneous infiltration, and were very favorably impressed with the results obtained.^{8,9} Statistically these results seem better than those obtained by any other method used at that time or at the present time. The nine years war in China and the late occupation of Shantung Province by the Japanese have cut off all reports since that study. More recently a referred case has been treated by this method. Previously all types of other standard treatments had been used, including protein shock with diphtheria toxoid, fever therapy with intravenous typhoid-paratyphoid vaccine, and long courses of the original sulfonamide drugs, to which the leprosy had not responded but was becoming progressively worse. With alternate courses of gold intravenously and *hydnocarpus* oil intramuscularly the lesions faded, the trophic ulcers healed and the patient gained thirty pounds in weight, but unfortunately after the specific treatment had been discontinued for two months because he seemed clinically and bacteriologically free from the disease and was just on the verge of being paroled to his home, he was found dead in front of his radio listening to the news of the impending war in the Philippines where all his interests lay. The cause of death was coronary thrombosis. Because of these experiences I still believe the treatment of leprosy with gold plus *hydnocarpus* oil has immense value.

OTHER methods of treatment have been tried such as aniline dyes, i.e., trypan blue, fluorescein, eosin and methylene blue intravenously but these chemicals cannot be recommended; protein shock therapy has been attempted by the use of intravenous and subcutaneous injections of specific products such as nastin extracted

from a streptothrix growth obtained from leprous nodules; typhoid-paratyphoid vaccine injected intravenously, diphtheria antitoxin and toxoid and cobra venom given subcutaneously have all been employed but cannot be universally recommended.

Arsenic orally and intravenously in the form of the arsphenamines has been used extensively, especially in those lepers with an accompanying syphilis, but the tests for the organism of leprosy remain positive after the syphilitic infection is cured. Antimony, as potassium antimony tartrate and in the pentavalent form as faudin or neostibosan, has been used and has proven its value only in the acute lepra reaction in order to "bring down" the fever. In some cases artificial thermal therapy has caused marked improvement in the lepra lesions, but in most cases no favorable end results have been reported which would lead to the assumption that it is of value as an eradicator of the organism.

The sulfonamides have also been given a prominent place in the experimental treatment of this disease with very indifferent results, except for promin, which was used in Carville,¹⁰ where Faget and Pöggé regard it as the most encouraging experimental treatment ever undertaken in that institution.

It will be seen from the above that there is no specific "cure-all" for leprosy any more than there is a "cure" for tuberculosis. The treatment of leprosy and the results obtained from it vary with the districts involved and the individual giving the treatment. There are remedies which certainly help specifically in the healing of the skin and nerve lesions but in other respects the therapy is like that of tuberculosis in general. As soon as the diagnosis of leprosy is made the whole outlook of the patient changes. Even though there is not much physical discomfort accompanying the onset, except an acute neuritis in some cases, immediately the character of the disease is made known fear and hopelessness enter the picture as in no other malady with the possible exception of cancer. Therefore the whole environment of the patient must be changed to combat this psychological aspect, especially as regards surroundings, personal hygiene, diet, rec-

reation, and work. He must have assistance in facing the morale-depressing aspects of the disease. If segregation is decided to be best for the patient, the relatives and the community, the institution at Carville, Louisiana, is the only one with adequate facilities in continental United States. In localities where segregation is regarded as impractical and in those areas where the disease does not seem to spread, lepers, like tuberculous patients, may be handled in their own homes and communities.

Needless to say, any concomitant disease such as syphilis, malaria, intestinal parasites, etc., should first be treated before any specific therapy is instituted. The patient should be placed in hygienic surroundings attractively arranged. There must be thorough cleanliness of the body and clothing, a diet high in calories and vitamins, and occupation provided either as a livelihood or as part of the therapeutic measures. The medical profession has learned a great deal from the war in the handling of mental attitudes in their relationship to disease and injury. Probably the most difficult problem in the therapy of leprosy is the mental attitudes. The victim is or thinks he is an outcast from society, hopeless as far as a cure is concerned, mentally depressed and tired from the effects of the toxins and/or his despair. Therefore every attempt must be made through environment, encouragement, occupation and recreation to help him lead as natural and happy a life as possible under the circumstances.

SUCH is the story of leprosy as related to the return of the armed forces to their homes in the United States. Although the probability of an extensive epidemic is not a source of worry the possibility that a comparatively small number of sporadic cases will crop up from time to time should make us conscious of the disease. With the high standards of living for the most part prevalent in the United States, leprosy should not be able to gain a foothold, but there are areas, both urban and rural, where high standards of living are not maintained. The armed forces have been drawn as equally from those re-

—Concluded on page 206

OXIDASE AND DIABETES*

M. Clotilde Souto Maior, M.D.†

Rio de Janeiro, Brazil

INVESTIGATION of diabetes mellitus and its manifestations has for a long time preoccupied many research workers eager to discover the etiopathogeny of this disease and the inner mechanism of all associated troubles.

It is true that, since Dobson (1) demonstrated that the sweet taste of the diabetic patient's urine, discovered by Thomas Willis (2), was due to the presence of glycosides, much has been done by Claude Bernard's experiments producing glycosuria by injuring the wall of the third ventricle, and by von Mering and Minkowsky (3), whose experiments reached the reproduction of the same pathologic picture in dogs. Houssay and his school (4) also contributed much in demonstrating the role of the hypophysis in this disease of metabolism; the research done by Long and coworkers (5) underlined the importance of the suprarenal glands; and Soskin and coworkers (6) insisted on the influence of the liver. Nevertheless, much has to be done in the future, until we can count upon a complete knowledge of this complex metabolic disturbance.

In the etiopathogenic dominion the unknown factors are multiplying. We know a great number of the links that form the chain but their complete capture is still in the dark, and many things are still waiting for a solution as regards therapeutics. No doubt, the discovery of insulin by Banting and Best began a new era in therapeutics; so much so that the average age of surviving diabetic patients is at present 64.8 years, according to Joslin (7). However, the chemical nature of insulin and its inner form of action are still being discussed.

As if our knowledge had not enough gaps now, there are new ones appearing

with every new research. Thus we have, for instance, the recent findings by Seabra, concerning the modifications of glycemia as a function of oxidasic effusion.

Several authors, according to Vignoli (8), place the glycolytic agent not in the plasma but in the granulocyte. However, with the experiments by Seabra (9) it can be observed that gradually as the neutrophil gets poor in oxidase, the latter passes toward the plasma (oxidasic effusion), to the erythrocytes, which opens the way to a decrease of the glycemia level.

A new field of research is thus opened to diabetology—that of possible relationship between the phenomena of effusion and oxidasic hypereffusion on one side and glycemic alterations, as observed in diabetes, on the other.

I

Concept of Oxidase Index and Oxidasic Effusion

OXIDASE is a complex enzymatic substance that makes oxidations possible under the temperature and other conditions existing in living beings, depending, however, essentially on the medium" (Seabra). The Seabra Oxidase Index depends on the oxidase intensity in a determinated number of leukocytes and on the quantity of leukocytes in the blood.

As to "Oxidasic Effusion," this is different. While blood oxidase index gives its latent oxidasic power, oxidasic effusion means the same power in activity. The Index, therefore, indicates the intensity of oxidase accumulated in the granulocytes, whereas oxidasic effusion, in various degrees, indicates the effusion of the oxidase toward the plasma and its adsorption by the erythrocytes. Therefrom results the close relationship between granulocytes and red corpuscles as first observed by Seabra (9).

This effusion of the enzyme presents itself gradually, varying with barometric

* Paper awarded the Oscar de Sousa Prize by the National Academy of Medicine (Rio de Janeiro, 1945).

† Assistant of Professor Luiz Capriglione (University of Brazil), with a scholarship granted by Professor Bernardo Houssay, Buenos Aires.

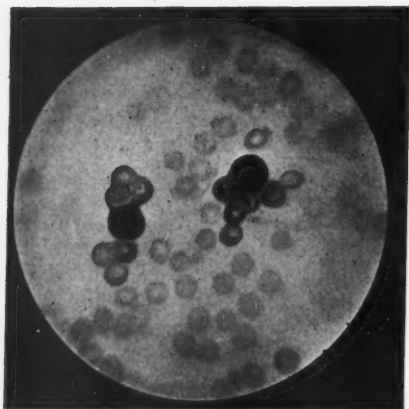


Fig. 1

oscillations, according to the characteristics of every individual.

To illustrate the phenomenon of hyper-effusion on patients under our observation, we show two microphotographed smears. There we see how the neutrophil delivers its oxidase to the nearby erythrocytes forming a film around them (Figs. 1 and 2). The classification of the intensity degrees of this phenomenon and other peculiarities of the matter were communicated by Seabra in the work whose study we greatly recommend (9) because, if we would here go into details, this paper would only become a compilation whose authorship would not pertain to us.

As a gradual phenomenon, the passage of oxidase from the neutrophil to the erythrocyte does not provoke important alterations in normal individuals. This is, however, not true for mentally unstable persons whose periods of agitation coincide with those of oxidasic hyper-effusion, i.e., of decrease of oxidase in the neutrophiles.

Together with sudden decompressions there appear also rapid alterations in the leukocytes and at the same time a decrease of glycemia. This fact becomes comprehensible through the accompanying lack of equilibrium in the mechanisms of glycemia regulation, with the predominance of the hypoglycemic factor.

After Pessanha and Lins (10) observed alterations of the oxidase index in patients

with diabetes mellitus, and Seabra (9) noted glycemic alterations accompanying hyper-effusion during flights, we decided to investigate in diabetes mellitus, in which alterations of blood oxidase index and of glucose occur, the eventual relationship of both with oxidasic effusion.

II

Plan and Method of this Paper

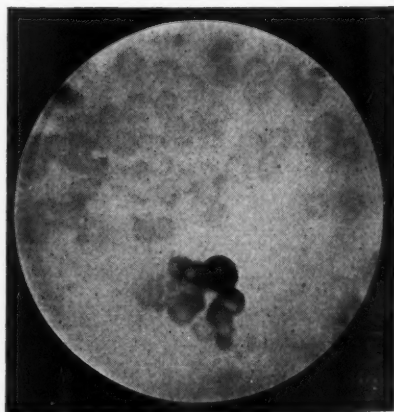
WE wished to investigate the relationship between hyper-effusion and glycemia in diabetic patients, getting thus the propedeutic value of the oxidase index and its variations as a function of the glycemic alterations of the patient, and to find in that way some additional data to those obtained by Pessanha and Lins.

In 20 hospitalized female patients we determined glycemia, oxidase index and degree of hyper-effusion at the day of their entrance into the hospital.

Then we submitted them to a special diet. The following week, we repeated the above-mentioned tests and, according to their results, administered insulin to the patient, or not. This was repeated every week.

There were cases in which we administered insulin immediately, for these patients had extraordinarily high glycemia levels, or other serious complications. These observations will be published later because we do not want the present paper to be too extensive.

Fig. 2



III

Oxidasic Hypereffusion and Glycemia

FOR the study of the first 12 patients, with 154 tests, we note (Fig. 3) that in all cases the increase of oxidasic hypereffusion comes immediately before, or simultaneously with, decrease of glycemia, of course in accordance with the period at which the blood is drawn. On the other hand, decrease of hypereffusion produces stationary or increasing glycemia.

This is, indeed, quite logical, since oxidasic hypereffusion is accompanied by the throwing of oxidase into the plasma, that is to say, a glycolytic element, while decrease of hypereffusion makes this element get scarcer in the plasma.

Our experiments confirm the glycolytic action of leukocytic oxidase, which is the more intense the more distant from normality is the patient's condition, perhaps because in patients with balanced diabetes (normoglycemic patients) the factors that produce hyperglycemia enter immediately into action to compensate this hypoglycemic effect.

In our patients 11 and 12 (Fig. 3), in spite of strong hypereffusions, glycemic oscillations were very slight and did not exceed normal limits.

As a whole, our experiments connected with the action of oxidasic effusion upon glycemia confirm Seabra's conclusions.

IV

Seabra Oxidase Index and Glycemia

IN the 231 tests reproduced in Fig. 3, a clear parallelism between index and glycemia becomes obvious after a look at all the graphs together. This is quite comprehensible, since hypereffusion provokes decrease of glycemia and of oxidase index whose principal factor is the neutrophil's richness of oxidase which, precisely, decreases in hypereffusion. The few discrepancies are due to eventual oscillations in the quantity of leukocytes. This parallelism is equally observed in the 258 tests done afterward, some of which are part of the present paper and others pertain to more recent observations not included here.

Now, we will examine in particular the

possible meaning of the initial test in the 12 cases shown in Fig. 3 and in observations carried out later.

Oxidase index was higher than 15 in 14 cases, 12 of which are hyperglycemic. Oxidase index was 15 or less in 6 cases, 4 of which were normoglycemic.

This shows the relationship between the index and glycemia. Still more interesting is the coincidence of clinical complications with increased oxidase index, so much so that the highest index found—51—pertained to patient 9, a woman with gangrene of the toes. After operation, her general condition improved and her oxidase index dropped down, increasing again when the general condition got worse owing to the appearance of a sacral sore.

Another patient, whose observations are in our files but do not appear in Fig. 3, had a phlegmon and oxidase index 42.5 at her entrance to the hospital. She died immediately. Furthermore, we filed the observations of a patient with corticopleuritis and oxidase index 32; those of a patient with an ulcer of the leg and oxidase index 30; those of a patient with no complications but a glycemia level of 480 mg. per cent and oxidase index 36, the day of her entrance.

These are the highest values obtained by us in oxidase index tests. In the same cases occurred also the most serious complications and highest glycemia levels.

We also observed that in 4 out of 6 cases whose index was 15 or less (cases 7, 8, 11 and 19), the diet was sufficient to restore their equilibrium, so that no insulin had to be administered.

V

Insulinotherapy and Glycemia

THE relationship found between hypereffusion and glycemia does not depend on insulinotherapy, for it exists also in cases where no insulin was administered. Even when hypereffusion drops down, glycemia rises, and this in spite of the insulin administered (cf. cases 5, 5th week; 6, 6th week; 2, 1st week; 3, 1st week; and 3, 2nd week). Particularly interesting is case 11 whose glycemia level was coordinated to hypereffusion with a delay of one

OXIDASE AND DIABETES

HYPEREFFUSION-INDEX - GLYCEMIA - INSULINOTHERAPY

KEY

H	SEABRA HYPEREFFUSION TEST:	SEABRA OXIDASE INDEX:	G	GLYCEMIA
5 =	+++	50	500	mg.
4 =	++	40	400	"
3 =	+	30	300	"
2 =	±	20	200	"
1 =	-	10	100	"

INSULIN UNITS ADMINISTERED DURING THE WEEK

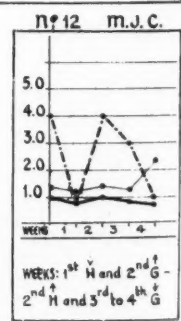
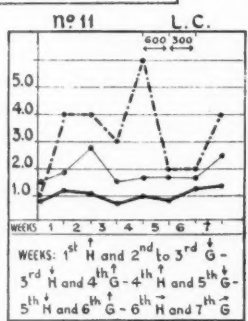
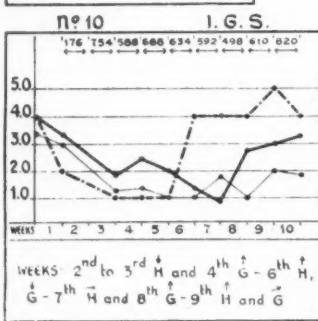
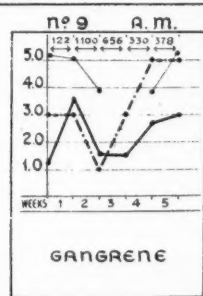
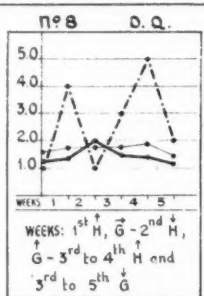
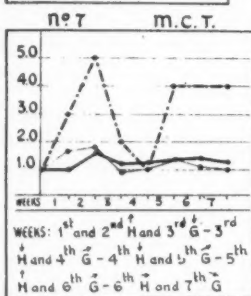
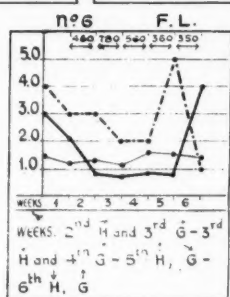
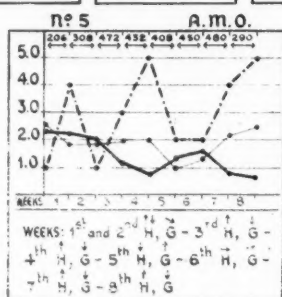
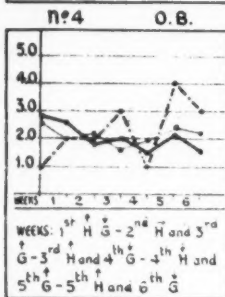
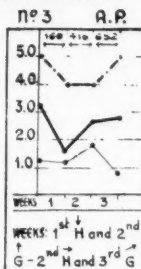
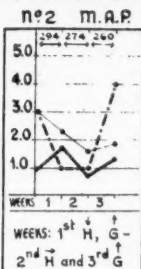
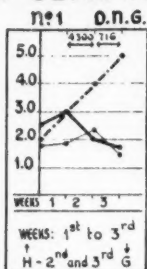


Fig. 3

week. With the purpose of treating a furunculosis, this patient received insulin; at that moment (6th week), her glycemia levels reached high values that had never been reached before, in accordance with the decrease noted in oxidasic hypereffusion.

The scheme of Fig. 4, responding to the same key as fig. 3, represents the fact that decrease of hypereffusion goes together with rise of glycemia, whereby the absence or presence of insulin does not interfere.

This finally explains an observation made long ago and for which we used to give the most simple explanation: that of a mistake in the laboratory work. We observed, indeed, that a patient with the same diet, the same quantity of insulin and without any change in his general condition had important changes in his glycemia level, so that we went on several times repeating these examinations. Now, we see that the laboratory's work was not wrong, but that the rhythm of hypereffusions varied according to the atmospheric changes and to the stability of every individual, as described by Seabra (9).

We have to thank Dr. Paulo Seabra, the guide of our investigations, for his invaluable cooperation and for placing at our disposal his research laboratory at the Instituto Terapeutico Orlando Rangel, where the tests of oxidase index and those of oxidase hypereffusion were executed by his efficient assistant, Miss Helena Krygier.

Conclusions

IN view of the great number of tests and the concordance of their results, in

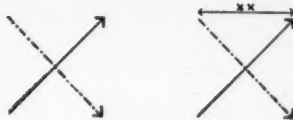


Fig. 4

spite of the small number of patients observed, we may conclude as follows:

- 1)—It is confirmed that leukocytic oxidase is one of the factors of glycemia regulation.
- 2)—The highest figures of Seabra oxidase index were those corresponding to serious cases of diabetes or patients with clinical complications; there was, however, one serious case with normal index.
- 3)—The increase of hypereffusion comes just before, or simultaneously with, the decrease of glycemia in diabetic patients; the decrease of hypereffusion produces stationary or increased glycemia.
- 4)—Influence of hypereffusion was greater in patients whose glycemia was far from normal.
- 5)—The data given in the present paper explain why diabetic patients with the same diet and the same quantities of insulin administered, without changes in their general condition, present so many glyceimic alterations: these are due to the rhythm of oxidase hypereffusions.

Bibliography

- (1) Dobson—in: Joslin, E., Root, H., White, Priscilla, Marble, A.—The Treatment of Diabetes Mellitus. Lea & Febiger, 1940.
- (2) Wilks, T.—ibidem.
- (3) Mering, J. von, and Minkowski, O.—Verhandl. deut. Nat. & Aerzt. Heidelberg, 1889—23: 393.
- (4) Houssay, B. A.—New Eng. J. Med.—1936—214-913.
- (5) Long, C., Katzin, B., and Fry, Edith.—Endocrinology—1940—26: 309.
- (6) Soskin, Samuel, Essex, H. E., Herrick, J. F., and Mann, F. C.—Am. J. Physiol.—1938—124: 558.
- (7) Joslin, E., Root, H., White, Priscilla, Marble A.—The Treatment of Diabetes Mellitus. Lea & Febiger, 1940.
- (8) Vignoli, J.—Fisiologia da regulação glicêmica.—"A Noite," Rio de Janeiro—1938.
- (9) Seabra, Paulo.—Imprensa Médica—1944—306: 25.

CANCER

*Edited by John Mumford Swan, M.D. (Pennsylvania), F.A.C.P.
Executive Secretary of the New York State Committee of the
American Society for the Control of Cancer, Inc., assisted
by Charles William Hennington, B.S. (Rochester), M.D.
(Hopkins), F.A.C.S.*

REPORT OF CASES OF TEN YEAR SURVIVALS OF CANCER FROM THE HOSPITALS OF ROCHESTER

IN 1940 we reported eighty-one cases of five year survivals of patients treated in the hospitals of Rochester, N. Y., during 1935. During that year (1940) one of the hospitals made a systematic search through its old records and found seventeen cases of cancer operated before 1935, so that instead of eighty-one cases to be followed up in 1940 to determine the survivals into the ten year group, we have only sixty-four cases to account for. And we find that twenty-five are living without recurrence (40.0 per cent). This brings the total ten year survivals up to 234.

During the sixth year none of the sixty-four patients were lost. One patient with cancer of the breast died of chronic cardio-vascular disease; one with cancer of the breast died of metastasis to the skeletal system; one patient with cancer of the tongue died of late recurrence and one patient with cancer of the ovary died of scalding in a canning factory.

During the seventh year eight patients were lost (one, of the fundus of the uterus; one, of the miscellaneous group; three, of the breast; one, of the skin; and two of the cervix of the uterus). Nine died. (Six of the nine patients had breast cancer and died of lung metastasis, cirrhosis of the liver, metastasis to the brain, recurrence, tuberculosis of the lung and in one, the cause was unknown). Of the three remaining deaths, a patient with cancer of the body of the uterus and a patient with cancer of the larynx died of cardiovascular disease and a patient with sarcoma died of unknown cause.

In the eighth year three patients were lost: (one cancer of the ovary, one of the cervix of the uterus, and one of the breast) and six died. Of the latter, one patient who had cancer of the breast died of cancer of the rectum. One patient with cancer of the ovary died of local recurrence. One with cancer of the uterus died of arteriosclerosis. One of the patients with cancer of the breast, one of cancer of the lip and one of cancer of the uterus died of unknown cause.

During the ninth year three patients were lost: (one of those with cancer of the breast; two with cancer of the cervix of the uterus) and none died.

During the tenth year five patients were lost and one died of unknown cause. Of the patients lost two had had breast cancer, one cancer of the larynx, one cancer of the uterus and one endothelioma of the neck.

WE are still able to follow up the following patients who are living and well longer than ten years. One treated for carcinoma of the breast in 1917—twenty-eight years. One treated for carcinoma of the breast in 1924—twenty-one years. Seven patients living and well from the 1925 group: one patient each of cancer of the breast, the cecum, the cervical lymphnodes, the ileum, the kidney, the ovary and the testicle—twenty years. Seven are living from the 1926 group: two each of cancer of the stomach and the uterine cervix, and one each of the cervical lymphnodes, of fibrosarcoma and of the sigmoid

—nineteen years. Seven from the 1927 group: four breasts, two cervix and one fundus of the uterus—eighteen years. Eight from the 1928 group: four breasts, one cervix and three fundus of the uterus—seventeen years. Eleven from the 1929 group: seven breasts, one cervix, one vulva and two fundus of the uterus—sixteen years. During the five year period, between 1930 and 1935, we have ninety-three patients still living and well. Of these, thirty had breast cancer, fourteen had cancer of the gastro-intestinal tract, seven of the genito-urinary tract, one ovary, fifteen cervix, fifteen fundus of the uterus, eleven miscellaneous malignancies.

SUMMARY: Beginning in 1935, when

twenty-three patients with cancer of various organs had reached the ten year survival period, we have reported year by year those who have been followed through the years from five to ten. The over-all number of these patients is 234 and the survival period extends to twenty-eight years in one instance.

Of these 234 patients 160 are still known to be living and well. Let us remind ourselves that of those who have died of unknown cause, not all necessarily, have died of cancer; nor have those who have been lost been lost because they have had a fatal recurrence. In many cases the desire to change residence is a cause as well as failure of the attending physician to reply to the request for information.



CORRESPONDENCE

CONCERNING PRIVINE

To the Editor:

SEVERAL authors^{1,2,3} have drawn attention to the secondary congestion arising from misuse of the nasal vasoconstrictor, privine. The experiences of these authors appear, in general, to have been closely parallel. In each instance, the writer claims to have seen a number of patients suffering from chronic turgescence of the mucosa covering the inferior turbinates. The history of these patients reveals that they had originally commenced to use privine nose drops for coryza or allergic rhinitis. Initially, the medication had provided effective relief for several hours but over a period of time the turgescence had become gradually worse and the period of effectiveness of the drops had steadily decreased. The final proof of the responsibility of privine for the congestion had rested upon the fact that cessation of medication for a period of several days

was invariably followed by return of the mucosa to normal.

Without wishing to dispute the experience of others, I believe it worthy of putting on record that privine solution, both the 0.1 and 0.05 per cent concentrations, has been used routinely in my active practice and clinics for the past three and a half years in all cases in which nasal decongestion has been required. It has been our custom to use a maximum of 2-3 drops of the solution in each nostril at any one instillation. When privine has been prescribed for home use, the patient has been advised to use the drops only as often as might be necessary to relieve distressing congestion and then only in the amount mentioned above. By means of periodic check-up and appropriate advice, patients have been discouraged from using privine or any other nasal vasoconstrictor over too prolonged a period.

As a result of these combined measures, we have reduced the incidence of secondary congestion to the vanishing point.

We believe that the several publications previously mentioned may unintentionally have created the erroneous impression that prinine is unique among vasoconstrictors in producing secondary congestion when misused. As Feinberg³ points out, Scarranto⁴ and Sternburg⁵ have found ephedrine and other vasoconstrictors equally liable to produce secondary congestion. We concur with Kully⁶ in the opinion that any vasoconstrictor used to excess may produce the typical signs and symptoms. Without entering upon a discussion of the underlying mechanism of the phenomenon, we feel it to be a direct reaction to tissue anoxia arising from the vasoconstriction itself. If this be true, the liability of a vasoconstrictor to produce this effect will depend upon its potency and duration of action. The more efficacious the constrictor the more likely is it to produce secondary congestion if it be misused. The means of avoiding this complication appears to lie in adequate instruction of the patient by the physician

along the lines suggested in the professional literature accompanying the package, coupled with periodic check-up of those patients who must necessarily use vasoconstrictors for a protracted period. The new small-size dropper now being issued with this preparation which automatically limits the amount delivered at any one filling should also tend to reduce the incidence of this condition.

Provided these considerations are kept in mind, we believe prinine as safe as any other vasoconstrictor available and considerably more effective.

HENRY M. SCHEER, M.D.

1. Gollom, J. The problem of nasal medication with particular reference to prinine HCL 0.1%, *Canad. Med. Assn. J.* 51:123, (Aug.), 1944.

2. Schiller, I. W. Deleterious effects of prinine hydrochloride. *N. Eng. J. Med.* 232:333 (March 15), 1945.

3. Feinberg, S. M. and Friedlaender, S. Nasal congestion from frequent use of prinine hydrochloride. *J.A.M.A.* 128:1095 (Aug. 11), 1945.

4. Scarrano, J. A. Rapidity of shrinkage and immediate and secondary reactions following local applications of ephedrine and benzedrine. *M. Rec.* 140:602 (Dec. 5), 1934.

5. Sternburg, Louis. The abuse of vasoconstrictors in hay fever and vasomotor rhinitis. *N. Y. St. J. Med.* 44:1573 (July 15), 1944.

6. Kully, B. M. The use and abuse of nasal vasoconstrictor medications. *J.A.M.A.* 127:307 (Feb. 10), 1945.



EDITORIALS

—Concluded from page 183

sistance of organized medicine to regimentation, but, curiously enough, labor favors compulsory sickness insurance.

Child Health Under Non-Political Medicine

AN outstanding fact emerges from the Metropolitan Life Insurance Company's studies of its industrially insured people. This is the amazing decline in the age-adjusted death rate from children's dis-

eases at ages 1 to 14 during the past thirty-five years—76 per cent among white boys and 80 per cent among white girls. This despite two wars and a depression. The death rate from measles, scarlet fever, whooping cough and diphtheria alone has dropped well over 90 per cent among white children in the period mentioned, while the death rate from all causes combined now is less than the mortality from the four communicable diseases thirty-five years ago.



American Scientists Aid Egyptians

DR. Maurice L. Tainter, director of research, and Dr. Chester M. Suter, director of chemical research of the Winthrop Chemical Company, Inc., Rensselaer, N. Y., and New York City, arrived in

Cairo in December to assist in new research on tropical diseases on invitation of the Egyptian government. The two American scientists were to spend several months abroad. Their investigations were to include studies on malaria, schistosomiasis, and trachoma.

CONTEMPORARY PROGRESS

MEDICINE

Penicillin in Subacute Bacterial Endocarditis

R. V. CHRISTIE (*British Medical Journal*, 1:381, March 16, 1946; also in *Lancet*, 1:369, March 16, 1946) presents the official report of the Penicillin Clinical Trials Committee of the Medical Research Council of Great Britain on the use of penicillin in subacute bacterial endocarditis. Under the auspices of this Committee penicillin was used in the treatment of 147 cases at 14 different centers. Penicillin was given by intramuscular injection every three hours or by continuous intramuscular infusion. The dosage employed varied, but it was found that almost any system of dosage was effective in some cases if treatment was continued for 10 days or more. The best results were obtained, however, with a dosage of 0.5 mega (million) units daily for 28 days in patients who had received no previous penicillin treatment. In some patients who had received a previous course of penicillin in inadequate dosage and had relapsed, a larger dose was required in the second course than in previously untreated cases. Of the 147 patients treated, 50 have died and 80 have apparently been cured; in the apparently cured group the follow-up had passed the period in which relapses usually occur. In the series reported, most relapses occurred within thirty days and relapse was very rare after fifty days. Most of the remaining 16 patients are still under treatment, but in a few instances treatment has been discontinued. The infecting organism was a streptococcus in all but one of the 147 cases, and in 136 cases was *Streptococcus viridans*; in one case *Hemophilus influenzae*. The sensitivity of the infecting organism to penicillin was measured by the usual method and compared with that of the standard Oxford staphylococcus. Unless the infecting organism was more than 10 times as resistant as the test staphylococcus, the therapeutic effect-

iveness of penicillin was not unfavorably affected.

R. Mokotoff and his associates (*American Journal of Medical Sciences*, 211:395, April 1946) report 17 cases of subacute bacterial endocarditis; 14 of these patients have fully recovered from their infection and have been free from recurrences for eight to twenty months. These patients have been closely followed up since their discharge from the hospital; their blood cultures have remained negative; they have been afebrile with normal blood count. One of these patients developed congestive heart failure and died eight months after discharge from the hospital; there was no recurrence of symptoms of endocarditis in this case and autopsy showed a healing and healed endocarditis. Some of the other patients in the recovered group show signs of congestive heart failure, but some of this group have returned to their former work or to school. Ten of these patients had rheumatic heart disease, and 4 congenital heart disease; only 1 patient had no apparent heart disease before the onset of the symptoms of endocarditis. Various methods of dosage were employed, but the authors recommend as generally effective 200,000 to 300,000 units daily given by intramuscular injection every hour for three to four weeks. If the infecting organism is more resistant than usual larger daily dosages for a longer period may be required.

COMMENT

Some clinicians use 500,000 units daily for several weeks. Tremendous amounts are required to effect a cure of subacute bacterial endocarditis.

M.W.T.

Treatment of Macrocytic Anemia with Folic Acid

T. D. SPIES (*Lancet*, 1:225, Feb. 16, 1946) reports the treatment of 41 cases of typical macrocytic hyperchromic anemia with folic acid; folic acid was also tried in

the treatment of 4 cases of iron-deficiency anemia, in 3 cases of anemia associated with leukemia, and in 3 cases of aplastic anemia. In the cases of macrocytic anemia, the red cell count was 2.5 million or less and the color index over 1; the bone marrow contained megaloblasts and showed the typical erythroblastic arrest. A diagnosis of pernicious anemia was made only if there was no free hydrochloric acid, pepsinogen or rennin in the gastric juice after histamine stimulation; a diagnosis of sprue was made if there was steatorrhea. The folic acid was given intramuscularly or intravenously in doses of 20 to 50 mg. daily in a few cases, but in most cases was given by mouth in daily doses of 10 mg. (or less in a few cases) to 400 mg.

Twenty-six patients responded well to folic acid therapy, with a satisfactory rise in the red cell count following a typical reticulocyte response, and a corresponding improvement in clinical symptoms; this group included 5 cases of pernicious anemia and 8 cases of sprue. All but one of the other patients with macrocytic anemia showed some improvement, even those who had received less than 10 mg. folic acid daily. In the cases of iron-deficiency anemia, aplastic anemia, and anemia associated with leukemia, there was no improvement. On the basis of the results obtained the author advises that the dose of folic acid in the treatment of macrocytic anemia should be 20 mg. daily given by mouth or parenterally. Higher dosages can be used, if indicated, without any ill effects. This should

be combined with a diet high in protein, vitamins and minerals.

COMMENT

The use of folic acid for macrocytic anemia opens up an interesting treatment. The advantage is that it can be used orally. Recently the cost of the product has been reduced, which will permit more experimentation.

M.W.T.

Rutin; a New Drug for the Treatment of Increased Capillary Fragility

R. L. SHAN-
NON (*American Journal of Medical Sciences*, 211: 539, May 1946) reports the use of rutin in the treatment of patients with increased capillary fragility. Rutin is a crystalline glucoside of quercetin which is derived from buckwheat leaves and flowers and many other flow-

ers and leaves. The product used by the author is prepared by the Eastern Regional Research Laboratory of the U. S. Department of Agriculture from green buckwheat. The capillary fragility in the cases reported was determined by Gothlin's technique. The usual dosage of rutin was 20 mg. three times a day; in a few cases a higher dosage, 40 mg. three times a day, was employed. There were no toxic effects in any case. A group of 24 patients with hypertension was treated; 13 of these cases showed increased capillary fragility and were treated with rutin; the capillary fragility index became normal within twelve weeks in all cases, and none of the patients had any "vascular accident" during the period of treatment. The other 11 patients with hypertension were being treated with potassium

DEPARTMENT EDITORS

- MALFORD W. THEWLIS *Medicine*
Wakefield, R. I.
THOMAS M. BRENNAN *Surgery*
Brooklyn, N. Y.
VICTOR COX PEDERSEN *Urology*
New York, N. Y.
HARVEY B. MATTHEWS
Brooklyn, N. Y. *Obstetrics-
Gynecology*
L. CHESTER MCHENRY
Nose and Throat-Otology
Oklahoma City, Oklahoma
MADGE C. L. MCGUINNESS
Physical Therapy
New York, N. Y.
RALPH I. LLOYD *Ophthalmology*
Brooklyn, N. Y.
HAROLD R. MERWARTH *Neurology*
Brooklyn, N. Y.
EARLE G. BROWN *Public Health,
including Industrial Medicine
and Social Hygiene*
Mineola, N. Y.
HENRY E. UTTER *Pediatrics*
Providence, R. I.

thiocyanate. Seven of these patients showed normal capillary fragility when treatment was instituted; they were given rutin and thiocyanate coincidentally and the capillary fragility remained normal. Two patients who were being treated with thiocyanate alone showed an increase in the Gothlin index; rutin was added to the treatment and the capillary fragility returned to normal. One patient with increased capillary fragility was given rutin before thiocyanate therapy was begun; the index became and remained normal. Two patients with pulmonary hemorrhage with no demonstrable pulmonary lesions (x-ray and bronchoscopy studies) showed increased capillary fragility. Treatment with rutin resulted in cessation of the bleeding and return of the capillary fragility index to normal; one of these patients reported definite improvement in her general condition. One patient with hemorrhage into the eighth nerve nucleus and one patient with hypertension, complete heart block and retinal hemorrhages showed increased capillary fragility; treatment with rutin brought the capillary fragility to normal and prevented further hemorrhages. Three patients with purpura due to drug reactions were treated with rutin, but with "uncertain" results; the value of rutin is questionable in allergic cases. One patient with essential thrombocytopenic purpura was treated with rutin for two weeks, without improvement; the condition of the patient did not permit a longer trial of the drug before splenectomy was done.

The author concludes that the greatest value of rutin is in the prevention of vascular accidents in patients with hypertension, including those under treatment with thiocyanate; and in controlling pulmonary bleeding without definite cause.

COMMENT

Experiments with rutin should be continued. It appears that it has value in the treatment of some hemorrhagic conditions.

M.W.T.

The Response of Cirrhosis of the Liver to an Intensive Combined Therapy

L. M. MORRISON (*Annals of Internal*

MEDICAL TIMES, JULY, 1946

Medicine 24:465, March 1946) reports 20 cases of cirrhosis of the liver treated intensively with a combined therapy; 11 of these patients had no ascites, and 9 had ascites. The combined therapy included a maximum protein, high carbohydrate, high vitamin, low fat diet; intramuscular injection of an unfractionated liver extract, reinforced by vitamin B extract; multiple vitamin capsules and vitamin B complex by mouth; vitamin K if jaundice was present; and 2 gm. each of methionine cholin daily; the high intake of skimmed milk and cottage cheese in the diet supplied casein and cystine. One group of 23 patients was treated by a high carbohydrate diet and palliative therapy (the control group); another group was treated by a modified Patek regimen. The intensive combined method of therapy reduced the mortality in the compensated cases (without ascites) to zero, as compared with 27 per cent in the control group. The mortality rate in cases with ascites was 11 per cent in the combined therapy group and 75 per cent in the control group. The treatment with combined therapy resulted in remission of all signs and symptoms in 64 per cent of cases without ascites, and in 34 per cent of those with ascites. In the control group none of the patients with ascites showed complete remission of symptoms. The intensive combined therapy also resulted in a sharp reduction in the period of disability in both cases with and those without ascites.

COMMENT

This intensive combined therapy for cirrhosis of the liver makes sense. The author has included all essential factors.

M.W.T.

PHYSICAL THERAPY

Exercises for the Convalescent Bed Patient

G. M. TAYLOR, J. W. McFarland and Anna Bond (*Archives of Physical Medicine*, 27:82, Feb. 1946) describe exercises for the patient confined to bed following operation or while recovering from an illness. The movements described are simple and easy to learn, and require no apparatus. The doctor, nurse or technician who instructs the patient in these exercises must know the exercises well, and the reasons for them; they must also be able to win the confidence and cooperation of the patients whom they instruct. Each exercise is to be repeated three times, unless definite direction indicates otherwise; and each is to be done slowly in three phases; the phase of strong contracture or tension of the muscles; the phase of conscious relaxation; and the phase of complete rest. For these exercises, the patient lies flat on the back, preferably without a pillow, the hands near the head with the elbow flexed, and the feet about a foot apart. The exercises described include exercises for the feet and legs; exercises for the thighs, exercises for the torso, exercises for the upper extremities; and for the head and neck. The last exercise is one for "body relaxation." For this the patient lies flat on the back, legs out straight, arms at side, to obtain general relaxation as complete as possible. Then the various muscle groups are checked one by one in the order of the exercises, to focus the attention of the patient on each muscle group and to improve the relaxation of each group. Exercises for the feet and legs can be used in most diseases and after most surgical operations; they are valuable as a prophylaxis against phlebothrombosis, thrombophlebitis and embolism. Such exercises also gently stimulate and improve the tone of the abdominal muscles. The other exercises also aid circulation and improve posture and the general physical condition of the patient. The exercises may be continued indefinitely at home as "a simple program of physical conditioning."

COMMENT

Exercise is essential for life and health. The body is efficient only so long as its muscular system has proper tonus. While the skeletal muscles are chiefly concerned in exercise, they do not tell the whole story. Active, vigorous exercise calls for the complete co-operation of the nervous, cardiovascular and respiratory systems.

There is increased mechanical pressure upon the veins during diastole both by the contracting muscles and the pumping of the diaphragm. Oxygen demand is increased on movement and the respiratory system must supply this demand, so respirations are deeper and more frequent, the heart contracts more vigorously and quickly, blood pressure rises and there is marked activity of the central nervous system.

Early ambulancy even unto 24 hours post-operative or postpartum is the order of the day among some surgeons who are concerned with the frequency of thrombophlebitis, phlebothrombosis or embolism. Others pin their faith on heparin and dicoumarol. It goes without saying that prolonged inactivity whether in surgical or medical cases does cause these lesions. Therefore exercise should be instituted as early as possible, after 24 hours in surgical cases, the same day in medical. Passive exercises may be given by the nurse or technician in cases of great weakness but as soon as possible active exercise should be taught and insisted upon.

Instructions to patients and attendants begin with the order that every hour, on the hour, the patient is to breathe deeply five times, increasing daily, up to 15 times. Posture for proper body mechanics is the first essential. Lying comfortably on the back, relaxed as much as he possibly can, the patient breathes easily and slowly.

Exercises for the toes, feet and legs in every conceivable position, done slowly, with a rest between movements, repeated after a complete range of motion has been gone through, will be sufficient for the first day or so and will not tire the patient. This is for the medical patient. For the surgical patient, passive exercise will have to be done if the patient be too weak or fatigued to do active exercise. In such cases, flexing the toes on the foot and the foot on the leg and the leg on the thigh, and then extending each, repeating three times, at least three times daily, oftener if possible, should prevent stasis. These exercises have a secondary effect upon abdominal muscles, stimulating and toning them up and so are also used following abdominal operations. These exercises for toes, feet and legs

improve the tone of the muscles responsible for arch strain. Prevent foot drop by having the bedclothes loose at the foot of the bed so the foot is not dragged down. A board or box across the foot of the bed so the soles may be pressed firmly against it is an excellent idea. This is particularly required in all cases of paralysis involving the lower extremities.

Exercises of the thighs, back and torso make for good body mechanics, prevent or correct low back pain, sciatica and some cases of dysmenorrhea.

The upper extremities, head and neck, are next exercised so that every muscle is used. As a rule, our young men are not strong in the muscles of the torso and upper extremities and had to have special gymnastics to develop them in training during the last war, an excellent procedure judging from the improved physique of most of those encountered.

Relaxation of the entire body follows the above exercises. Progressive relaxation as proclaimed by Edmund Jacobson of Chicago is the ideal to strive for. The tempo of present-day life, particularly in the cities, makes for the tension that is conducive to ill health, mentally and physically, filling our mental institutions, our fracture and surgical beds particularly, and conducing to an under par in health that is a disgrace to a nation as blessed as this.

Fatigue is to be avoided as it defeats the purpose of the exercise, so each case is treated individually depending on the condition of the patient, his reaction to his lesion and his mental attitude. "Make haste slowly."

It would be well for us physicians to stress to our patients the necessity of keeping up with the exercises learned postpartum, post-operative or postdisease, learning to relax as they should and so conserving health and strength to build a strong parenthood for a progressive country. The remedy is in our hands and their hands.

M.C.L.McG.

Ultraviolet Blood Irradiation Therapy of Apparently Intractable Asthma

G. P. MILEY, R. E. Seidel and J. A. Christensen (*Archives of Physical Medicine*, 27:24, Jan. 1946) report that 160 cases of intractable asthma have been treated by ultraviolet blood irradiation therapy; 120 of these patients have been carefully followed, but a complete follow-up is not available for 40 patients. A given amount of the patient's blood was withdrawn and citrated. It was exposed to a high intensity ultraviolet radiation in the Knott hemoirradiator which returns the irradiated blood to the patient's venous circu-

lation. In all the cases of bronchial asthma treated, the patients had failed to respond to other standard methods of treatment. The ultraviolet blood irradiation therapy was given every four to six weeks until the patient's symptoms were definitely improved for two months. Then treatments were given at eight to ten week intervals until it was possible to reduce the number of treatments to three or four a year. The amount of epinephrine or ephedrine given by injection was reduced as rapidly as possible; the inhalation of vaporized or ephedrine products was continued for the first few months in some cases, but given up as soon as possible. In about 50 per cent of the cases, chiefly those of an advanced type of bronchial asthma, a moderately severe asthmatic attack occurred during the night after the first blood irradiation treatment. Attacks rarely occurred after subsequent blood irradiations and were always mild. Of the 120 patients adequately followed up 77, or 64.1 per cent, are relatively symptom free or definitely improved and 27, or 22.5 per cent, are slightly improved. The best results were obtained in the younger patients with early intractable bronchial asthma. Older patients with advanced intractable asthma were not permanently relieved of symptoms, but had considerable relief when under constant treatment.

COMMENT

Reports of improvement in intractable cases of asthma make good news for sufferers. Many of these patients are prone to try every new method or remedy offered and rarely persist in a well-controlled study, so that a report on 120 cases has value. The effect of ultra-violet irradiation on the human organism is still one of the moot points of physical medicine. Reading the various reports of authors over the years, one must face the fact that they are not speaking the same language as to quality of ultraviolet radiation, source, length of time and repetition of dosage, personal equation, etc. One generator may give the same effect in a short time as does another in a longer, so one cannot designate distance in inches and time in minutes as criteria of treatment, to name but two basic factors. Definite rules must be laid down and followed by a number of research workers with well controlled conditions before appraising and condemning the use of ultraviolet when used externally.

The technique described by the authors

for blood irradiation has not varied over the years, so that it may be used in various centers without question as to variable set-up. This should be done to multiply well controlled cases and allay discussion on the rationale of the procedure by many who have not had the opportunity to try it.

As usual, the earlier treatment is instituted the better the result.

M.C.L.McG.

Effects of Massage on Denervated Skeletal Muscle

M. I. SUSKIND, N. M. Hajek and H. M. Hines (*Archives of Physical Medicine*, 27:133, March 1946) report experiments on the effect of massage and of electrical stimulation on the denervated gastrocnemius muscles of cats. It was found that massage did not notably retard the weight loss of the denervated muscle, but was effective in maintaining the contractile strength of the muscle. Electrical stimulation, on the other hand, definitely retarded weight loss, but had no effect on the contractile strength of the muscle per unit mass of muscle. The findings suggest that the best method of treatment for paralyzed muscles is a combination of massage and electrical stimulation.

COMMENT

At first glance it would appear that these experiments are only of academic interest. However, to the physician confronted with paralyses of whatever kind, it is essential to know how to prevent wasting, and/or atrophy of affected muscles until such time as the regenerated nerve can again take over. Keeping up the tone of muscles by whatever means possible is the great desideratum.

In any nerve injury, the practitioner of physical medicine prefers to get to work at once to preserve the muscle tone before nerve degeneration. Within 10 days of the insult to the nervous system treatment will shorten convalescence, buoy up the patient and make for a more satisfactory result. Begun earlier, so much the better. In Bell's palsy, for instance, gentle heat to overcome skin resistance and warm up the affected muscles, thus bringing increased circulation to the part, is the first step. A 10 to 12 minute treatment with continuous galvanic current at the smallest milliamperage consistent with comfort, followed by active and passive exercises of all the facial muscles, is given the first day or two after the injury. Motor point stimulation for 2 or 3 minutes follows the continuous galvanic current in a few days. Gentle stroking and kneading of the affected

muscles are done and these are taught to the patient with the active and passive exercises as homework. Such measures have put the patient well on the road to recovery in hundreds of cases in 7 to 10 days, with recovery in light cases in 10 to 14 days. More severe cases take somewhat longer.

Where the case has not been seen within 10 days, the task is harder. Electrodiagnosis by the faradic and galvanic currents may be necessary to give a prognosis of ultimate recovery. Much valuable time has been lost and seances are going to be longer and more frequent. Frozen tissues are not so amenable to treatment as those treated early. Infinite patience is required with depressed patients, which further retards recovery.

Where pain is an outstanding feature diathermy, long or short wave, will be in order, and, to those fortunate enough to possess a static machine, the brush treatment decompressing the nerve in the Fallopiian canal will make for marked relief of pain. Other nerve injuries are treated likewise. Do not wait for irreversible lesions.

Hemiplegia responds quickly to early treatment. As the hand is a highly specialised organ it is slowest to recover, therefore early treatment must be especially stressed. Movement in the foot and leg returns comparatively sooner. Gentle heat, massage, passive and active exercise, with early recourse to galvanism both continuous and interrupted, will well repay the attention given.

Interrupted galvanism to the motor points must be given very gently and for short duration. The least amount of current requisite to elicit the slightest response in the affected muscles, repeated but once or twice, is quite sufficient. Strong currents we feel are deleterious; there is too great a shock to already shocked tissue. This tissue needs encouragement, not further insult. For its nutrition, the continuous galvanic current should precede the interrupted for at least 10 minutes, gentle heat preceding all measures.

Electrical stimulation initiates a contraction in a muscle and this is analogous to normal active movement; thus is preserved the function of the muscle. Any gentle muscle contraction exerts the same effect as massage, preventing fibrous degeneration. Likewise, contractions exercise the muscle as a whole, making for added strength in compensation.

M.C.L.McG.

Treatment of Sciatica with Alternating Current

A. COHEN and associates (*Archives of Physical Medicine*, 27:219, April 1946) report the treatment of sciatica with the alternating current. In the cases treated, the criteria for the diagnosis of sciatica were: pain and tenderness along the course

of the sciatic nerve; diminished patellar reflex on the affected side; positive Laségue sign. The method of treatment is as follows: If the patient can stand, the foot on the side involved is placed in a 6 x 10 in. metal electrode covered with absorbent cotton soaked in tap water; the active electrode (2 x 3 inches) is applied to the sacro-iliac joint or the sciatic notch on the affected side; the current is turned on slowly to the point of tolerance (usually about 10 volts). Treatment is for 20 to 60 seconds at each point. If the patient is lying down, on the abdomen or side, the foot electrode is bound to the sole of the foot, or a smaller electrode is applied to the Achilles tendon. The application of the maximum amount of current causes a contraction of the muscles with only slight discomfort. Pain is usually relieved immediately after treatment, and relief may persist for a few days; but treatments are usually given every other day until relief is complete. In the 25 cases treated by this method, the longest period of treatment required was three months; in the other cases treatment was given for one to ten weeks. Absolute rest in bed was not maintained in any of these cases during the whole period of treatment. Only a few of the patients lost time from work after the treatment was begun. The method is so simple that it can be used as an office treatment.

COMMENT

Any treatment that will help the sufferer with sciatica will be hailed with joy. Schmidt and Smith of Philadelphia published results in 1939, by this method, using the alternating current. The sine wave or sinusoidal current had been used previously and since by physicians doing physical medicine, with much success. The acclaim of short wave diathermy as the great reliever of pain has rather overshadowed earlier procedures. A combination of the two methods in severe cases has been used with good results. Where the sine wave has been used alone, heat preceding has helped consistently.

The sine wave is an alternating current and as such is already an integral part of the armamentarium of the physiatrist (the specialist in physical medicine), being usually connected with the galvanic instrument as it is derived by interrupting the galvanic current by set measures, called cams. The usual procedure has been to warm up the parts before applying the electrodes to the Achilles tendon

and to the site of pain, the sacrosciatic region, for 15 to 20 minutes, daily or thrice weekly, until relief occurs. The contracting muscles are being exercised and thus restored to normal tone.

With the presently described method, the sine wave is being interrupted and the smaller electrode is being used as an active electrode as usually employed in the galvanic treatment which likewise has pain-relieving qualities. In fact the galvanic current was the first current used for this purpose, and is still being carried on with histamine electrophoresis added, which many converts now feel is the greatest of all pain eradicators.

M.C.L.McG.

Treatment of Peripheral Nerve Injuries

A. M. PRUCE (*Southern Medical Journal*, 39:289, April 1946) describes the physical therapy employed in peripheral nerve injuries as an adjunct to the necessary surgical treatment in Army casualties. Physical therapy is employed both preoperatively and postoperatively. Before operation treatment is necessary for mobilization of stiffened joints, for loosening of adherent scars that interfere with joint and muscle function, and for improving circulation in edematous, thickened and infected skin. For mobilization of stiffened joints, the paraffin bath is of great value; it has a definite sedative effect, as well as stimulating local circulation and relaxing muscles in spasm. The stiffened joints are immersed in a paraffin bath (115° to 130°F.) and withdrawn at least five times, with a sufficient interval between immersions to allow the paraffin to solidify. The paraffin is removed with "mobilizing massage" and each joint is carried through its maximum range of motion passively, and then by active exercise. In the treatment of skin infection and inadequate circulation, the extremity involved, which in case of fracture is supported by a wire ladder splint, is immersed in a whirlpool bath at temperatures varying from 98° to 105°F. for fifteen to twenty minutes. Ultraviolet irradiation treatment is then given in graduated erythema doses. After operation, measures to combat joint stiffness are continued. When the elbow or knee joint must be fixed in extreme flexion after operation of nerve repair, the extremity is

fixed in plaster for four weeks, then the cast is bivalved, and measures for the gradual extension of the joint are begun. During the postoperative period before regeneration of the nerve has occurred, the chief object of physical therapy is to maintain supple joints with a maximum range of motion. During this period, the patients are grouped according to the nerves involved, and are instructed in carrying out "self-administered" passive movements under supervision. When there is the first sign of voluntary contraction, graduated active exercise and re-education for function are begun. It is generally accepted that repair of an injured peripheral nerve takes place at a rate of approximately $\frac{1}{2}$ inch a month. At the time of reinnervation as calculated on this basis, galvanic stimulation is also of value as an adjunct to active movement and re-education.

COMMENT

"Physical therapy methods hold the first place in the treatment of peripheral nerve injuries;" thus stated Pollock in 1934 when summing up the treatment of these lesions. World War No. 1 gave a great impetus to these remedial measures, World War 2 continued them in larger numbers, and the Industrial War between, where injuries are a hundred and thousandfold in comparison over the years, has put the seal on them as of first importance after necessary surgery.

In the military services, utilization of cli-

mate, spa therapy, outdoor games, marches, recreation generally with heliotherapy, hydrotherapy, aerotherapy, relaxation, occupational therapy, all helped the patient to recover quickly following physical restoration or concurrent with it.

All the measures of physical medicine used day after day, in hospital, office, factory and home were transferred bodily for the rehabilitating and reconditioning of the wounded, mentally, physically, psychically, to the needs of war. They had been tried and proven and were not found wanting. Great praise is due the physicians who persisted in their belief that physical medicine, given early, would prevent the many disabilities resulting from World War 1.

The interest of Mr. Bernard Baruch in setting up a Foundation to pursue inquiries into physical measures further focussed attention on them to the greater glory of their healing power.

In peripheral nerve injuries there is hardly a physical measure that is not used at some time in the course of treatment, though active exercise is stressed beyond all others. Get the patient going and keep him going is the watchword for a healthy, happy returned veteran anxious to get a job and make good in civilian life. Occupational therapy was fine in the hospital, but work therapy as soon as possible is what makes the worker a lively, wide-awake citizen ready to take up his share of making a good government work. This is just as true if not more so for the industrial casualty blitzed on the civil front.

Early physical therapy, early occupational therapy, early work therapy make shattered, injured nerves whole.

M.C.L.McG.



LEPROSY

—Concluded from page 190

gions as from the better environments, therefore theoretically the disease should appear in these places first, although it must be borne in mind that leprosy is not a respecter of persons; it occurs in rich

and poor, white or colored, in the Orient and the Occident.

We must be conscious of the disease and its relationship to our post-war medical problems. If the above outline will act as a refresher and stimulate us to a watchful attitude, it will have served its purpose.

Bibliography

1. Hopkins, Ralph, and Faget, G. H.—J.A.M.A. 126: 937 (Dec., 1944).
2. Strong, R. P.—Stitt's Diagnosis, Prevention and Treatment of Tropical Diseases; 1944 Edition, pp. 816-17.
3. McCoy, G. W.—Arch. Derm. and Syph. 37: 172 (1938).
4. Cowdry, E. V.—Amer. J. Path. 14: 103-135 (1940).
5. Report of the Leonard Wood Memorial Conference on Leprosy, January 9-23, 1931. China Med. Journ. 45: 848 (1931).
6. Kerr, A.—China Med. Journ. 45: 911 (1931).
7. McCoy, G. W.—Public Health Reports, 57: 1727 (1942).
8. Heimbürger, L. F.—China Med. Journ. 44: 752 (1930).
9. Heimbürger, L. F.—Report from Tsinan Leper Hospital, 1932.
10. Faget, G. H., Pogge, R. C., et al.—Pub. Health Rep. 58: 1729-41 (1943).

MEDICAL ARTS BUILDING.

Medical BOOK NEWS

Edited by

ALFRED E. SHIPLEY, M.D., Dr. P.H.

All books for review and communications concerning Book News should be addressed to the Editor of this department, 1313 Bedford Avenue, Brooklyn 16, N. Y.



Classical Quotations

● The time within which infection most frequently occurs is during the stage of dilatation. This is owing to frequent examinations made with the object of ascertaining the position of the foetus. A proof of this is that before the introduction of chlorine disinfection nearly all the patients after labor, protracted in the dilatation period, died of puerperal fever.

IGNAZ SEMMELWEIS

Die Aetiologie, der Begriff, und die Prophylaxis des Kindbettfiebers, Budapest and Vienna, 1861.

New Edition of Christopher's Surgery

A Textbook of Surgery. By American Authors. Edited by Frederick Christopher, M.D. 4th Edition. Philadelphia, W. B. Saunders Co., [c. 1945]. 4to. 1548 pages, illustrated. Cloth, \$10.00.

THIS, the fourth edition, in the reviewer's opinion, is one of the most comprehensive and informative single volume texts in surgery. Once again the initial introductory chapters dealing with tissue repair, bacteriology and kindred matters have been condensed and brought into proper balance with the broader subject matter of general surgery. Among many others, valuable and timely new sections have been contributed respectively by J. S. Lockwood and Col. Edward D. Churchill on chemotherapy and military surgery. These additions should be well received because of the ever-increasing roles of trauma and infections in both military and civilian practice.

The entire contents have been brought up-to-date by 201 authorities most of whom are identified with our teaching hospitals and medical schools. All phases

—etiology, symptomatology, pathology, diagnosis and treatment—have been thoroughly expounded. Similarly, the treatment of complications has been fully elaborated. Details of technique and surgical attack should, however, be sought in texts dealing primarily with operative surgery.

The reading matter comprises 1448 pages in two-column style. There is also an extensive and well-organized index. Furthermore, the many references should stimulate the student's interest in collateral and supplemental reading. The book should appeal equally to both student and practicing surgeon. It is recommended without qualification.

ARTHUR GOETSCH

G. U. Diseases in Brief

Synopsis of Genitourinary Diseases. By Austin I. Dodson, M.D. 4th Edition. St. Louis. C. V. Mosby Co., [c. 1945]. 12mo. 313 pages, illustrated. Cloth, \$3.50.

THE author is to be complimented on the 4th edition of this excellent condensed work of three hundred pages, which he has brought up to date. He has included new chapters, one devoted to the features of penicillin and sulfa drug therapy, and another to the value of estrogenic therapy and castration in prostatic carcinoma.

Tables are added briefly outlining the types of bacteria found to invade the urinary tract. All the types of organisms have not been included. Convenient lists for high vitamins and acid ash diets are given, as well as a guide for alkaline ash diet.

The book is fully and clearly illustrated with black and white drawings, half tones and radiographic prints. It should be very useful and helpful to medical students as well as practitioners.

AUGUSTUS HARRIS

How to Bandage

The Technique of Bandaging and Splinting. Including Sections on Slings and Adhesive Plaster Strappings. By Major Arthur M. Tunick, M.C., A.U.S. Illustrated by Guy Brown Wiser. New York. Essential Books, [c. 1945]. 12mo. 206 pages, illustrated. Cloth, \$3.00.

THIS book gives a clear concise description of all types of splints and bandages that can be used in case of accidents. Emphasis is placed on spinal injuries which is important. This book is written for lay people and should be very helpful. The illustrations are very complete and well planned. The book is good for the home and for boys' and girls' clubs.

MARIE M. BEHLEN

British Pediatrics

Lectures on Diseases of Children. By Sir Robert Hutchison, Bart., M.D., and Alan Moncrieff, M.D. 9th Edition. Baltimore, Williams & Wilkins Co., [c. 1944]. 8vo. 478 pages, illustrated. Cloth, \$6.75.

THIS set of lectures concerns common problems relating to the infant and child. They are 34 in number and represent a systematic course on such subjects as infant feeding, diseases of the new born, the digestive disorders, rickets, scurvy, rheumatism, respiratory diseases, behavior and mental problems, etc. They are presented in a personal tone, are easily understood and entirely practical. It is a well worth while book for the general practitioner.

THURMAN B. GIVAN

Landsteiner's Immunology Revised

The Specificity of Serological Reactions. By Karl Landsteiner, M.D. With a chapter on Molecular Structure and Intermolecular Forces by Dr. Linus Pauling. Rev. Edition. Cambridge, Mass., Harvard University Press, [c. 1945]. 8vo. 310 pages. Cloth, \$5.00.

THE present edition of this authoritative study, now a classic, closely follows the outline of the first edition published in 1936. It has been expanded, however, and brought up to date by the inclusion of new material and the introduction of new topics.

An account of the experiments on antigens and serological reactions with simple compounds by the author and his colleagues is presented together with a concurrent discussion of the phenomena of serological specificity. Emphasis is chiefly on the chemical aspects of immunological reactions. Material, not readily available, is to be found in the chapters dealing with antigen—antibody reactions, chemical investigations on specific non-protein cell substances and the nature and specificity of antibodies. The closing chapter by Linus Pauling is a brief and lucid discussion of molecular structure and intermolecular forces.

The text is readable for anyone with a background of chemistry and biology and is so comprehensive as to meet the demands of the specialist. This final work of a great immunologist merits its place among the classics of immunology.

MAX HARTEN

BOOKS RECEIVED for review are promptly acknowledged in this column; we assume no other obligation in return for the courtesy of those sending us the same. In most cases, review notices will be promptly published shortly after acknowledgment of receipt has been made in this column.

Essentials of Neuro-Psychiatry. A Textbook of Nervous and Mental Disorders. By David M. Olkon, M.D. Philadelphia, Lea & Febiger, [c. 1945]. 8vo. 310 pages, illustrated. Cloth, \$4.50.

A Primer of Electrocardiography. By George Burch, M.D., & Travis Winsor, M.D. Philadelphia, Lea & Febiger, [c. 1945]. 8vo. 215 pages, illustrated. Cloth, \$3.50.

Poor Man's Doctor. By Lewis Tryon, M.D. New York, Prentice-Hall, [c. 1945]. 8vo. 233 pages. Cloth, \$2.75.

Fundamental of Psychiatry. By Edward A. Strecker, M.D. 3rd Edition. Philadelphia, J. B. Lippincott Co., [c. 1945]. 12mo. 222 pages, illustrated. Cloth, \$3.00.

Music for Your Health. By Edward Podolsky, M.D. New York, Bernard Ackerman, [c. 1945]. 8vo. 134 pages. Cloth, \$2.00.

Everyday Psychiatry. Concise, Clinical, Practical. By Comm. John D. Campbell, M.C., U.S.N.R. Philadelphia, J. B. Lippincott Co., [c. 1945]. 8vo. 333 pages, illustrated. Cloth, \$6.00.

Manual of Psychological Medicine. For Practitioners and Students. By A. F. Tredgold, M.D. 2nd Edition. Baltimore, Williams & Wilkins Co., [c. 1945]. 305 pages. Cloth, \$5.00.

Fluorochemistry. A Comprehensive Study Embracing the Theory and Applications of Luminescence and Radiation in Physicochemical Science. By Jack De Ment. Brooklyn, Chemical Publishing Co., [c. 1945]. 8vo. 794 pages, illustrated. Cloth, \$14.50.

MEDICAL TIMES, JULY, 1946